U.S. Fish & Wildlife Service Big Stone Odessa, MN 56276 320/273 2191 National Wildlife Refuge People with hearing impairments may reach Big Stone NWR through the Federal Information Relay System at 1 800/877 8339 Big Stone website address: http://www.fws.gov/r3pao.bigstone U.S. Fish & Wildlife Service 1 800/344 WILD © J. Brandenburg







This "Blue Goose," designed by J.N. "Ding" Darling, has become a symbol of the National Wildlife Refuge System.

Big Stone National Wildlife Refuge

The upper reaches of the Minnesota River in west central Minnesota are a refuge for wildlife--and are fascinating to people interested in wildlife-oriented recreation.

Located two miles southeast of Ortonville, near the Minnesota-South Dakota border, Big Stone National Wildlife Refuge offers recreational opportunities to visitors throughout the year.



The Minnesota River winds 11.5 miles through the refuge. From an airplane, the river looks like a wavy line stretching along the bottom of a much wider valley. The wide valley was carved thousands of years ago. Melting ice from glaciers caused a huge lake to form in northwestern Minnesota. This lake, called Lake Agassiz, overflowed to the south. In time, these torrents of water eroded a river bed named the glacial River Warren. Today, the quiet Minnesota River occupies the bottom of the old glacial river.

Look for evidence of glacial times. Try to catch a view of the high bluffs on either side of the river. The valley is 1.5 miles wide at the upper end of the refuge and four miles wide at the lower end. Imagine the time required for a river to carve a valley of this size!





Granite outcrops, Dick Sorenson, USFWS

Black crowned Night-heron, J. Mattsson, USFWS





Human History

Although little is known about early native tribes that used the Minnesota River as their highway, the Dakotah Indians lived along the river banks at the time the earliest settlers arrived in western Minnesota. Some interesting Indian and early settler sites are still visible. A number of farms were present in the river bottomlands in 1971 when the Big Stone National Wildlife Refuge was authorized.

The U.S. Army Corps of Engineers built a dam to create a large reservoir, and then, in 1975, transferred the land to the U.S. Fish and Wildlife Service. Through a cooperative agreement, the Corps still maintains the water control facilities, but the Service has management responsibility for all 11,521 acres of refuge lands.

Habitats for Wildlife

A wide variety of habitats exist on the refuge--from the wet world of the river and reservoir areas to the dry world of the granite rock outcrops.

The dam in the Minnesota River created an additional 4,250 acres of wetlands which provide resting places for migrating waterfowl and shorebirds and homes for summer residents such as common egrets, great blue herons, cormorants, and many species of ducks.

Low-lying woodlands support migrating warblers and other song birds, as well as resident populations of deer and



Dick Sorenson, USFWS



Whitetail deer, J. Mattsson, USFWS



Prairie chicken, J. Brandenburg

Photos (below) Prairie seed, D. Buri

Ball cactus, B. Olson, USFWS





other mammals. Woodlands along the Minnesota and Yellowbank Rivers containing American elm, ash, box elder and silver maple provide old tree trunks with hollow cavities which are good nesting sites for wood ducks and hooded mergansers. Some non-native introduced species, such as the Russian olive, often are removed because of their tendency to spread into areas like "weeds." About 850 acres of refuge lands consist of low woodlands.

The refuge still contains about 1,700 acres of native or unplowed prairie. This is typical tall grass prairie country, with wide expanses of grassland and only occasional oak trees. Because many exotic grasses, woody shrubs, and flowers seed themselves among native prairie species, refuge staff conduct controlled burns to restore and promote vigorous growth of native prairie plants. A multi-agency, cooperative effort to reestablish the prairie chicken in this region was implemented during 1999. During the past two years since this effort was initiated, wild prairie chickens have been released at one site on the refuge and at least seven other locations within the direct vicinity. This project is ongoing and the success of this effort is yet to be determined. However, prairie chickens are being seen and the preliminary results are promising.

A portion of refuge lands are used to grow crops for overwinter wildlife use or to prepare ground for the seeding of native paririe grasses and wildflowers. Some of those areas have been seeded to native grass.

One of the most interesting habitats on the refuge is the 100 acres of granite outcrops. These bare rock areas support unusual species of cactus and other plants. The high outcrops provide some excellent views of the entire refuge and its wildlife residents.









Wildlife Watching

Wildlife viewing opportunities abound at the refuge. During spring and fall migrations 17 species of ducks and 23 species of shorebirds can be seen in and around the refuge. Some of the more common waterfowl species to be seen include mallard, blue-winged teal, northern shoveler, and Canada geese. Abundant shorebirds include least and semipalmated sandpipers, and lesser yellowlegs. Many birds breed and nest on the refuge throughout the summer. Secretive birds like the American bittern establish breeding territories within the refuge's wetland habitats.

Other animals to watch for include white-tailed deer, gray partridge, muskrats, beaver, and the playful otter.

Wildlife viewing opportunities are better during morning or evening hours when animals are most active. A bird list is available at various points on the refuge.



Auto Touring

An approximately six mile auto-tour route on the refuge is open to the public. There are numbered stops along this route that correspond to numerical locations identified in the refuge's auto tour leaflet, which describe specific features associated with the area. Auto tour leaflets are available at the refuge headquarters or at the tour route entrance.

The auto tour provides a view of the major habitats in the refuge. Be on the lookout for wildlife. Turnouts provide a place to park while watching wildlife.

Motor vehicle use on the refuge is restricted to roads designated as vehicle access roads. Blocking access to any road or trail entering the refuge is prohibited. Motor vehicles are required to utilize only designated parking areas. Parking along refuge roads or within other non-designated areas is not allowed.

Photos (from top) Wood duck, J. Mattsson, USFWS

Muskrat, J. Mattsson, USFWS

Borrowing owls, J. Brandenburg



River terrace prairie. C. Blacklock

Bicycling

Bicycling is an excellent way to view the refuge and is generally permitted on all refuge roads and trails that are designated as being open to either foot or vehicle travel. Certain foot trails that contain fragile habitats which can be damaged by bicycles are either permanently or seasonally posted as being closed to this type of travel. Signs notifying users of these closures will be posted at the entrance of trails. Cross-country travel across refuge lands with bicycles is strictly prohibited.

Foot Trail



A foot trail starts at the rest area near the interpretive shelter. An hour's walk will provide a close-up view of prairie plants, granite outcrops, river meanders, and wildlife. A special foot trail leaflet provides information keyed to the numbered stops. Pick up the leaflet at the start of the trail.

Canoeing and Boating



Pintails, USFWS

The Minnesota River is one of the State's official canoe routes. The refuge offers canoe access areas and parking areas. Canoeing the refuge's section of the river can take from a half to a full day, depending on one's skill and the number of fallen trees or beaver dams encountered. The only official portage is a 150-yard portage at the low-flow water control structure.

Canoeists must stay in the main river channel on a route marked with signs. Although the canoe trail is open from mid-April to September 30, canoeing is best in the spring during high water events.

Use of non-motorized boats and boats equipped with electric motors is authorized only within the main channel of the Minnesota River. Boat travel within all other waterbodies or use of boats powered with gas engines on the refuge is prohibited.



Fishina

Fishing is a popular activity at the refuge. Some of the most popular places to fish are along reservoir levees and at spillways located within them. Fishing from the banks of the Minnesota and Yellowbank Rivers is also often productive for anglers.

Information and specific regulations regarding fishing on the refuge are identified within leaflets that can be obtained at the reservoir low-flow spillway, auto-tour route entrance, and headquarters. Refuge fishing season dates and regulations are consistent with those established by the state of Minnesota.







Pheasant, **USFWS**

Cottontail, R. Towne, **USFWS**

Hunting

The refuge offers public hunting opportunities consistent with state designated seasons and regulations. Species open to hunting include gray partridge, cottontail rabbit, jack rabbit, gray and fox squirrel, pheasant, turkey, and deer.

Information and specific regulations regarding hunting on the refuge are identified within leaflets that can be obtained at the refuge's parking areas and the headquarters.

Cross-Country Skiing and Snowshoeing

Big Stone is open to cross-country skiing and showshoeing. The easiest trail for beginners would be to follow the refuge roads. There are no trails maintained specifically for the purpose of cross-country skiing on the refuge.



Welcome to Big Stone National Wildlife Refuge!



road vehicles and snowmobiles are prohibited. To Big Stone To Ortonville ■ Collecting plants, animals, and (2 miles) artifacts are prohibited. Refuge P **P** 75 P P P Odessa (21) To Appleton 15 13 miles $\overline{\mathbf{P}}$ Lellow River Scale (Miles) \mathbf{P} Scale (Kilometers) P P To Milbank P (11 miles) To Rosen (4 miles) P $\overline{\mathbf{P}}$ 15 miles





Map Legend

Refuge Boundary

Water

Dam

Auto Tour Route

Refuge Headquarters

Refuge Entrance

Tips for Visiting Big Stone

■ Pets must be leashed.

Stone lake.

The closest lodging is at Ortonville. The nearest public and private camp-

grounds are along the shores of Big

■ Swimming, horse-back riding, off-

■ Restrooms are provided on the refuge, from spring to fall, but drinking water is not available. ■ Camping and fires are prohibited.

Parking

Hiking Trail

Fishing Access